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ABSTRACT

This paper reports on a study in which twenty young adults were tested for their ability to accurately reproduce the articulatory and prosodic features of three non-Indo-European languages in which they had received instruction. The first of two basic goals of this research was to test, at the purely phonetic level, the "critical period for language learning" hypothesis (Lenneberg, 1967). The second problem was to see if students could acquire the linguistic features associated with "language accent" with no reference to grammar or lexical meaning. Both questions are considered, with special attention to the concrete results of the study and to their implications. The final section of the paper includes a discussion of the acoustic image imprinting theory, which is the basis for the method used to teach phonetic material in this experiment. (Author)

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LANGUAGE LEARNING ABILITY IN ADULTS: A STUDY ON THE ACQUISITION OF PROSODIC AND ARTICULATORY FEATURES*

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ABSTRACT

This paper reports on a study in which twenty young adults were tested for their ability to accurately reproduce the articulatory and prosodic features of three non-Indo-European languages in which they had received instruction. The first of two basic goals of this research was to test, at the purely phonetic level, the "critical period for language learning" hypothesis (Lenneberg, 1967). The second problem was to see if students could acquire the linguistic features associated with "language accent" with no reference to grammar or lexical meaning. Both questions are considered, with special attention to the concrete results of the study and to their implications. The final section of the paper includes a discussion of the acoustic image imprinting theory, which is the basis for the method used to teach phonetic material in this experiment.

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Gerald G. Neufeld

It is inevitable that pedagogical methods and materials reflect the views of methodologists and teachers about the abilities and limitations of their students. Furthermore, these opinions are likely to strongly influence the priorities and schedule of events for any programme. It follows that success in second language courses depends largely upon the theoretical soundness of the teacher's knowledge and intuitions about what his pupils can and cannot achieve. The problem, of course, is to prevent essentially intuitive positions from becoming so entrenched that they result in self-fulfilling prophecies.

How much can be expected, for instance, of a civil servant who, shortly after beginning instruction in his second language, finds that he has been placed in a "slow learner" group because of his score on the Modern Language Aptitude Test? Will the fact that everyone anticipates poor performance suffice to motivate him to prove them wrong? The premise here is that aptitude for learning another language varies with individuals, and that this ability can be reliably measured. When those who are thought to be good learners succeed and those who are considered poor learners do less well, the results are interpreted as support for streaming according to potential.

Similarly, how likely are adult students to attain anything approximating native-like proficiency in what is commonly called "accent", if the second language programme devotes only peripheral attention to articulatory and prosodic features? Is this de-emphasis an indication of support in the profession for Savignon's concept of "communicative competence" (1972), or does the lack of space in the programme reflect Scovel's conviction that it is a waste of time to teach adults what they cannot possibly learn (1970)? Whatever the case, adult students' foreign sounding speech is considered by many as adequate proof of their inability to achieve native-like mastery of phonetic features.

Where then does the problem lie, with the methods or with the students? If research substantiates the "critical period" hypothesis, we can then speak with more confidence

about what the adult can most efficiently learn. If, on the other hand, investigation reveals that young adults are capable of native-like proficiency at all linguistic levels, an overall reassessment of the rationale for second or foreign language teaching may be in order.

The underlying assumption of the project was that adults retain the potential for acquiring native-like proficiency in a new language (Neufeld, 1974; Neufeld, in press). The problem was how to access this potential and how to sufficiently motivate our students to exploit it. None of the well-known language teaching techniques seemed appropriate since their orientation and sequencing of new material were not compatible with our criteria.

Because of our special interest in the acquisition of phonetic skills, we needed an approach which would highlight articulatory and prosodic features. Another concern was that our students be thoroughly introduced or sensitized to the sound patterns of the target language before attempting to reproduce them (Postovsky, 1974). We also had to be sure that none of the participants in our study enjoyed a linguistic advantage because of previous knowledge or exposure to the target language. A more complex problem was whether we could successfully teach university students to produce native-like utterances without ever telling them the meanings of the words they used, and without ever presenting grammatical cues. How long could we expect to maintain their interest and motivation when the language learning situation was contrived to this extent?

PROCEDURES

Materials.

One eighteen-hour programme for individualized instruction was video-taped for Chinese, another for Japanese and a third for Eskimo. We chose three non-Indo-European languages in order to reduce the chance that subjects (Ss) would have to be rejected because of prior contact with the languages. The format for each programme was identical. The one-hour lessons were divided into two twenty-five minute segments with a ten minute break after the first segment. All instructions were in English and recorded by a native speaker. The remaining material was in the target language and read by a native speaker of that language. (More specific details about the teaching materials prepared for the study are available from the author.) As can be seen in the schedule below, the first three lessons required no audible production whatsoever. By delaying oral production, we hoped to minimize contamination of the "acoustic image imprint" described later in this paper. We intended, at first, to systematize the presentation of new sounds by commencing with phonemes which approximated the sound patterns of English. While feasible for Japanese, the task proved all but impossible

for Chinese and Eskimo. In retrospect, such sequencing would have unnecessarily complicated an already highly artificial language learning situation. The procedure we finally adopted was to tabulate the frequency of phonemes in distribution in the spontaneous speech of each of our three instructors, and to observe these frequencies when drafting the core material. (Samples of one thousand running words each were used for this purpose.)

Phase One. Lessons 1-3 contained variations of one hundred stock phrases specially prepared for the programme. Utterances ranged in length from one to eight syllables. In the instructions which preceded each twenty-five minute segment, the need to listen carefully was emphasized. Ss were actively discouraged from orally producing what they heard by means which will be discussed later. Phase One constituted what we referred to as the "initial imprinting stage".

Phase Two. While the first three lessons required only attentive listening, Phase Two (Lessons 4-12) involved three types of exercises in which nonverbal responses were elicited. The first was designed to sensitize Ss to the intonational contours of the target language. In the first segment of Lesson 4, an utterance was followed by a visual display of a piece of chalk which traced a rising and falling line, corresponding to the general rise and fall of intonation in the statement. This line intersected a horizontal centre line which represented the mid-point in the range. Figure 1 illustrates the procedure, first with the Chinese word[ma], which has a rising then falling pitch, and second, with the Japanese phrase [arigatɤgozaimas].

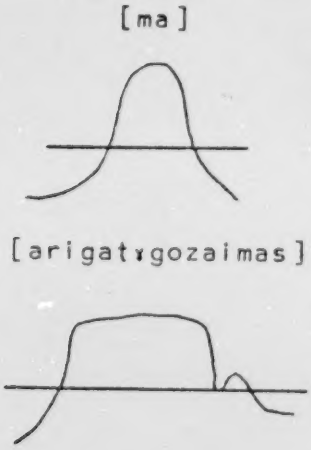

FIGURE 1

In the remaining five segments, Ss were required to trace new utterances in the manner already described.

The second exercise, introduced in Lesson 7, emphasized the cadence, or rhythmic contours, of the language. Broken lines varying in length were traced by S, to correspond to perceived stress and duration of utterances of four to ten syllables. Figure 2 illustrates the typical cadence for Eskimo statements.

FIGURE 2

Lessons 7-9 consisted of practice on both cadential and intonational contours, along with a few simple listening passages.

The third exercise in Phase Two was a conventional auditory discrimination procedure where Ss were asked to distinguish between phonemes in minimal pair contexts. Periodic reviews of earlier material were also included in these lessons (10-12).

Phase Three. The last six lessons were divided into two groups. Beginning with Lesson 13, Ss heard material which they imitated at a devoiced or whisper level. Utterances were increased in length with each lesson. Short review exercises covering previous material were also included. Lessons 16-18 called for oral imitation of model utterances, with instructions for self-correction. As in earlier phases, these utterances increased in length as lessons progressed.

Subjects.

We contacted over one hundred English-speaking students at the University of Ottawa who had participated in several of our earlier studies; these studies were not related in any way to this project. Because of the fifty-four hours required of Ss to complete the three language programmes, only forty agreed to take part. To obtain a more or less representative sample of the student population, we selected twenty-five of the forty, based upon their performance on measures used in previous research. We had data for the Otis test of verbal intelligence (Form B), the Minnesota Multiprofile Personality Inventory, the Modern Language Aptitude Test of Carroll and Sapon, and Pimsleur's Language Aptitude Battery. Twenty completed the series, twelve females and eight males, ranging in age from 19 to 22 years. All were told that they had been specially chosen because of their unusually high scores on the language aptitude tests which we had administered the year before. Although many expressed surprise at being considered excellent language learning prospects, they appeared willing to accept our word. Our intent was to heighten their interest, if possible, and to increase their desire to learn; in fact, the aptitude scores were not used at all as a pre-selection

criterion. When compared with published norms, our group did score slightly higher than average university students.

Method.

The project assistant contacted each of our twenty-five Ss to schedule the four weekly sessions. They were told that they were to be involved in a novel experiment, intended to prove that adults can achieve native-like proficiency in another language, despite prevailing opinion to the contrary. The assistant informed them that they would receive full reports of the goals and results of the study upon the completion of the project. We considered this important since many of the students who had served as Ss in our previous work had contacted us with enthusiastic comments or further questions after reading accounts of the studies in which they had taken part. No other information was given to Ss at this time, except to say that all pertinent details would be covered in the first lesson. Twelve students were scheduled for the September trimester and the remaining thirteen for the January to April session. Ss were instructed individually.

Ss were seated at a small console where they were given a pair of close-fitting headphones which were to be used for each lesson. Attached to these headphones was a sensitive and inconspicuous microphone, positioned immediately in front of S's mouth. Before beginning the video-taped programme, the project assistant carefully adjusted the microphone amplifier which activated a buzzer whenever any extraneous sound was detected. A different level was necessary for each S because of varying respiratory noise. The amplifier was then switched to the automatic sequencing equipment. The first twenty-five minute segment was then started.

Ss were told that the task expected of them was not especially difficult, but that it would require their closest attention. As they already knew, the instructions continued, they were to learn to make native-like utterances in a new language. Since the aim was to see how well they could acquire the "accent" of this language, they were not expected to learn either meanings of sounds or grammatical rules. The instructions went on to point out that presentation of meaning and formal rules would seriously distract them from attending to the sound patterns and musical qualities of the language. They were told that it was vitally important to refrain from imitating the new sounds they were to hear until requested to do so. First, they would be unable to hear what they said because of the specially designed headphones, and second, such attempts would make the listening task more difficult for them. Ss were then informed that, to help them to remain silent, they would hear a buzzer through their headphones every time they made a sound. The microphone amplifier was then turned on. Ss were asked to give their first name aloud; the buzzer sounded the moment they began to speak. They were then directed to whisper their name, at which point the buzzer

again sounded. This technique caused much amusement but functioned nevertheless as an excellent inhibitor. The instructions terminated by re-emphasizing the need to listen carefully to the material in the new language, and to listen only. The language was never explicitly named in the programme although Ss normally identified it correctly by the end of the first session. Each of the six possible orders for the three language programmes was used for the first six Ss, after which the ordering was recommenced.

Except for the initial instructions, Lessons 2 and 3 proceeded in the same way as Lesson 1, where only listening was required. We could devise no unobtrusive way of monitoring how attentive Ss were during this phase. Some listened with their eyes fixed on the video screen before them, while others appeared to be concentrating with eyes partially or entirely closed. Inadvertent noises which triggered the buzzer from time to time probably had a salutory effect.

For Lessons 4-6, Ss were given pencil and paper which they were to use for tracing intonational contours. Immediately following the instructions, an utterance was presented auditorily, then repeated, while in a visual display, a piece of chalk simultaneously traced the intonational pattern. This procedure was repeated several times with different utterances to illustrate what Ss were expected to do. They were then told to listen very carefully to the following utterance and attempt to trace the pattern in the manner of the preceding examples. The project assistant was prepared to stop the equipment if further explanation was required. The utterance was heard three times, then given again with the correct visually displayed contour, against which Ss could compare their versions. The scratch pad was collected after each session.

The same procedure was observed for Lessons 7-9, where both intonational and cadential contours were involved. To compensate for anticipated boredom or impatience, we kept Ss busy with exercises which varied in length, complexity and order.

In the auditory discrimination exercises in Lessons 10-12, Ss indicated their responses by depressing one of two keys located on the console in front of them. For fifty percent of Ss, the right-hand key was designated for "no difference" responses and the left-hand key for "different". The reverse order was used for the remaining fifty percent. The project assistant tabulated correct or incorrect responses by marking the colour of the light (red or green) which flashed on the monitor panel as either of the keys was depressed. Because of the interspersed review material, pads and pencils were again provided.

Beginning with Lesson 13, Ss were expected, for the first time, to imitate what they heard. The responses were to be no louder than an audible whisper. The gain control on the microphone amplifier was readjusted to prevent the buzzer from sounding with devoiced utterances. The signal was fed back into the headphones to permit Ss to monitor their responses. In the second segment of these three lessons, Ss were instructed to refrain from speaking when reviewing material from Phase Two.

The final three lessons were similar to Lessons 13-15, except for the absence of review exercises. The instructions in Lesson 16 called for oral imitation in a normal voice; the buzzer was switched off at this point. The stimulus utterance was played twice, after which Ss were requested to repeat precisely what they heard. The model was again presented twice to allow for self-correction. As in Lessons 13-15, the first utterances presented were very short, increasing to eight syllable units in Lesson 18. Ss' responses throughout Phase Three were tape-recorded for later analysis.

When the first programme had been completed, Ss were told that they had done even better than we had expected. We hoped, in this way, to sustain their interest, which was already at a surprisingly high level. In fact, the project assistant had no way of judging how well Ss had actually performed. Appointments for the next programme were then confirmed. The assistant explained that the following session would be like the very first except with a different language.

Testing.

Had we been interested in the acquisition of lexical meaning or of combinatorial rules, we could have used any number of well-known procedures to test for proficiency; standardized tests for our three language programmes were, of course, not available. As already explained, our aim was to teach exclusively phonetic material, where it is difficult to objectively assess performance. Although instrumental analysis was a possibility, we opted for native speaking judges. We did so because of the complexities involved in measuring intonation, which is a composite of change in pitch, stress and duration. Even if we had had the sophisticated computerized equipment devised by Léon and his colleagues at the University of Toronto, proficiency testing would have been long and costly.

Native speaking judges who had experience teaching their first language seemed a more reasonable alternative. With the kind assistance of the Chinese and Japanese embassies in Ottawa, we were successful in locating three judges for each of these languages who more or less met our criteria. For Eskimo, we had considerable difficulty in finding even two native speakers who had any teaching experience whatsoever. The situation was further complicated by the dialectal differences of the two Eskimo speakers, one coming from Inuvik and the other from northern Quebec.

Judges were interviewed individually, at which time they were told that our study consisted of detecting linguistic interference resulting from learning English as a second language. The assistant responsible for this phase of the project explained that they were to hear tape-recorded speech samples of twenty persons, some of whom, as recent arrivals, might not yet have learned English. Still others, it was explained, might be fluent speakers with detectable traces of interference. In addition, judges were told that the design of the experiment required that an unspecified number of non-native speakers be included in the twenty samples. The judges were then shown the five point scale which they were to use when assessing each speech sample. This scale read as follows:

1. Heavily accented with nearly all English-like sounds.
2. Noticeably foreign with many English-like sounds.
3. Near native with frequent English-like sounds.
4. Appears native with occasional English-like sounds.
5. Unmistakably native with no signs of interference.

Judges were reminded that, although improbable, many or conceivably all the samples they were to hear might be non-native. The assistant further explained that the success of this study depended upon their ability to make subtle distinctions which should be neither over- nor underestimates of the extent of interference.

The final section of Lesson 18 consisted of ten statements of 4-8 syllable-units each, which Ss repeated in the normal manner. Only the fifth attempt for each statement was retained for evaluation purposes.

The scores for each S were calculated, first, by averaging the three independent ratings, and second, by computing the average between this figure and the collective rating given for each S in the second assessment where all three judges were assembled. Scores assigned in the second assessment were determined by majority opinion.

RESULTS AND DISCUSSION

Unfortunately, we were unable to analyze Ss' performance in Eskimo; because our two judges were frequently so far apart in their evaluations, we could not confidently average the two scores.

In the table below, composite scores for each S in Japanese and Chinese are listed, along with means and standard deviations in parentheses which have been corrected for bias.

Composite Scores with Means and Standard Deviations for Japanese and Chinese

Subject number	Japanese	Chinese
4	5	4
8	5	5
23	5	4
2	4	3
5	4	4
12	4	4
15	4	3
16	4	4
17	4	4
1	3	3
21	3	3
10	3	4
11	3	3
19	3	3
20	3	3
6	2	2
22	2	3
14	2	2
25	2	1
7	1	2
	Mean, 3.30 (1.12)	Mean, 3.20 (0.95)

Judges for the Japanese programme differed little in their independent assessments, $r_{tt}=0.92$. Although there was some last minute disagreement about the meaning of "2" versus "3" on the five point scale, overall differences between assessors were not statistically significant, $F(2,58)=0.99$, $p>.05$. In general, the scale was functional and sufficiently sensitive to enable judges to distinguish good from poor performance. Ss were found to differ significantly in terms of their degree of mastery of the prosodic and articulatory features of Japanese, $F(2,58)=12.24$, $p<.001$. Of particular interest were the ratings for nine of our Ss, three of whom obtained a score of 5 or "unmistakably native" and six of whom appeared to be native with traces of linguistic interference, based upon their ability to imitate ten high frequency statements. We were concerned that, despite our instructions, judges might have been over-generous in their evaluations. When recontacted individually, and informed that they had heard only non-native speakers, all three judges expressed surprise and disbelief.

We would have pursued this matter further had Ss' performance in the Chinese programme differed markedly from their progress in Japanese. On independent assessments the three judges for Chinese scored Ss in almost an identical manner, $r_{++} = 0.95$. Discrepancies were not statistically significant, $F(2,58) = 1.21$, $p > .05$. Our back-up procedure with group assessments closely paralleled initial ratings, $r = 0.97$. As was the case in the Japanese programme, Ss' performance varied significantly between excellent and poor, $F(2,58) = 19.44$, $p < .001$. Our experience in assessing performance in Japanese enabled us to be more precise in our instructions for scoring proficiency in Chinese. That only one of twenty Ss was viewed as "unmistakably native" may have been a reflection of our remark to judges that we were not necessarily looking for high scores. We were reticent to be too specific in our instructions about degree of nativeness for fear of biasing the judges.

The composite scores shown in the table clearly demonstrate consistency of performance in both programmes, $r = 0.82$. We were curious to know whether Ss found one language to be more difficult than the other. It will be recalled that Programmes I, II and III were presented in six different configurations. Statistical analyses yielded no significant differences between results obtained for Programmes I and II, $t(1,19) = 0.69$, $p > .05$. Nor did the order in which programmes were presented appear to have any influence on Ss' performance, $F(1,39) = 1.96$. We had expected Ss to be better with succeeding programmes, primarily because of their increasing ability to perform the various exercises in the lessons. The only reason we could find to explain the absence of differences was the ease with which Ss mastered the tracing task. Accordingly, one would expect learning effects to have dropped off rapidly after the first few lessons.

What had we shown, and how could we account for overall performance? After eighteen hours of contact time, nine Ss managed to convince three native speakers that Japanese was their first language; six others qualified as near-native. Only five had performed in the manner one would normally expect after such a short period of instruction. Similarly, Ss mastered the prosodic and articulatory features of Chinese, to the extent that eight out of twenty were judged to be native speakers (4 and 5 on the scale). Of considerable interest to us was Ss' ability to pass for native speakers in two "exotic" languages without ever having been presented with syntactic or semantic cues. Because of the results of a much earlier pilot study where French was the target language, we were concerned that Ss might become bored or impatient with material they could neither analyze nor

even repeat aloud. We were relieved to find that our revised approach all but eliminated such reactions.

In other words, young adults are able to acquire native or near-native proficiency in the sound patterns of new languages. Although some of our Ss obtained above average scores on language aptitude batteries, these tests did not prove to be especially good predictors of success. With the Modern Language Aptitude Test, we obtained a correlation coefficient of $r = 0.42$. Even with the Sound Discrimination subtest of the Language Aptitude Battery, only a slightly higher value was observed, $r = 0.45$. Scores on measures in some of our earlier studies led us to conclude that our sample was more or less typical of the University student population. It seems difficult, therefore, to explain our results in terms of normally distributed foreign language learning ability. Needless to say, the "critical period" hypothesis does little to account for the data.

There are some important questions which remain unanswered. Although the languages we used were real, the learning situation was very unusual. Ss did well with purely phonetic material. Could they have achieved this proficiency if they had been required to process additional information, in order to derive meaning and combinatorial rules? If presented first with phonetic material like ours, followed by vocabulary and grammar, could students retain their mastery of prosodic and articulatory features in a formal language learning situation? If we were to replicate this experiment with adolescents or adults in everyday classroom contexts, could we duplicate our data?

Stated another way, all we have demonstrated is that highly motivated university students, accustomed to the routine and paraphernalia of psychological experimentation, can acquire native-like proficiency in the sound patterns of another language in an artificial learning situation. Our findings are compelling from a theoretical standpoint, for we seem to have found the means to tap ability which is believed by many to be virtually non-existent in most adults. If these results can be duplicated, and the scope of the design enlarged to include additional parameters, our study will have been worthwhile. Answers to practical questions such as how our data can be used to improve current teaching techniques, are unavailable at present. It would be premature, for instance, to say that adults should now be encouraged to place more importance on the acquisition of phonetic skills. We have not even touched on the problem of whether such skills are pre-requisites for functional communication. Although we can say little in this paper about how languages should be taught, we can speculate about what our results imply for second language learning in general. We may also examine several issues which heretofore have attracted little attention.

Up to this point, we have said very little about the theoretical basis for the teaching method we used in the study. We assume that, to produce native-like sounds in a language, one must have internalized an auditory representation (acoustic image) for the sound patterns of that language. This acoustic image is gradually strengthened over time with increasing exposure. In addition to this input image, there appears to exist a parallel image which represents the phonetic shapes of the individual's output. If there were only one representation (input image), babies could never learn to sound like native speakers, since their own immature production would devastate their as yet imperfect internal model. Likewise, a schoolchild with an articulatory speech defect would be unable to perceive differences between his production and that of other children. As the young child becomes increasingly proficient in his language, his two phonetic representations appear to become almost mirror images of each other.

So far, we have spoken of one set of corresponding images. What happens in a diglossic situation where a child uses one dialect at home and another at school? He will not normally drop his home dialect unless he is ashamed of his class or cultural background. Instead, he will establish an additional set of phonetic representations, for both input and output, which will co-exist with the first set, without necessarily resulting in interference. If the only model available to him and his classmates is the teacher, it will be somewhat difficult to establish a clear imprint of this model because it is heard less frequently. If, on the other hand, everyone but himself speaks the new dialect, it will be difficult not to imprint the new sound patterns. His ability to identify specific features of the new dialect will, at first, exceed his ability to produce them. Unlike the baby, who has heard his language long before attempting to imitate it, the schoolchild's production image for the new dialect will continue to compete with the input image and, as a consequence, will probably retard his progress. This undesirable interference could be minimized if the child were to refrain from speaking until he had had sufficient time to imprint the new sound patterns.

The parallel image concept also explains how adults who have acquired a functional command of another language can perceive subtle differences in the sounds of various dialects, without being able themselves to accurately reproduce any of them (M. Best, personal communication). It is probable that persons who are capable of such sound discrimination have had extensive exposure to native speakers of the target language, early in their study.

Optimally, the production image will become progressively more accurate by sampling from an already well-established native-like input image. If the latter is still weak, cross-talk or interference between the two images will make it very difficult to attain a level where self-correction is possible. It is for this reason, then, that we developed materials where Ss were initially prevented from echoing the utterances they heard. We surmised that, only after providing ample time for the input model to stabilize, could we proceed to the audible production stage. If the behaviour of our Ss was any indication, this idea was not without merit. Even when responses were whispered, Ss rarely appeared satisfied with the accuracy of their imitations. To achieve native-like production without help, they had to develop a highly efficient self-correction mechanism which clearly depended upon a native-like input image.

If the acoustic image imprinting theory is anything more than a convenient way to explain casual observations, it is very likely that Canadians who wish to learn or improve their second language will encounter substantially more difficulty than did our Ss. In most instances, anglophones learning French, or francophones learning English, begin their studies by repeating aloud the new sounds they hear coming either from the teacher or from a pre-recorded tape. For students who live in areas where the target language is frequently spoken, the environment constitutes a second source of input. In addition to these native models, however, students are exposed to the imperfect production of their classmates, to say nothing of the influence of their own poor approximations. The input image cannot achieve integrity because of the constant interference from the non-native production image. Finally, a plateau is reached, where further imprinting of either image nearly ceases, and where input and output representations may become indistinguishable. As suggested earlier, the extent of similarity between the two images at this point seems to depend upon how many native versus non-native speakers the learner has been exposed to, and upon how much he has been obliged to speak during the introductory phase of study. To improve, he must first reshape his input representation to more closely correspond to the sounds of the target language. If he is successful, he must then attempt to rid himself of long established articulatory habits, a task which he may find tedious and not worthwhile.

Assuming for the moment that native-like proficiency, at all linguistic levels, is attainable by adults, there remains the question of how important "sounding native" is. There is little in any theory on second language learning which elucidates this issue. In the conclusion of their book, Lambert and Tucker (1972) candidly admit that, even after several years of French immersion in Montreal, English-speaking children do not achieve native proficiency insofar as "accent" is concerned. Since we can assume these children learn French to speak to francophones, it would be interesting to know something about the attitudes

of French speakers with whom these children come in contact. Along these lines, what can we say about the emotive reactions of English-speaking Canadians to the remarks of a politician who speaks with a heavy French accent? Is it unreasonable to assume that the absence of appropriate paralinguistic features will have a distracting and possibly negative impact upon the listener, especially in situations where the speaker wishes to convince (Morley, 1976)?

Another issue is the learning and communication strategies students use when conscious of their ability to occasionally pass for native speakers. Is this knowledge not likely to encourage them to pursue their studies, and to actively seek contact with the target culture? Conversely, how much enthusiasm can we expect from someone who speaks with a marked accent, and who has been led to believe that he can hope for nothing better?

Sound theories of second language learning and communication will preclude categorical answers to questions like these. For some, native-like proficiency will be important, while for others a functional knowledge of grammar and vocabulary will suffice. Our theories, therefore, must provide us with the constructs we need to reliably predict how individuals will learn or react in specific situations. We have finally reached the point where we recognize that there are striking similarities between the way children acquire their first language and the way adults learn their second. (For a review of the literature see Neufeld, D., and Van Vliet, 1975.) Despite these similarities, there can be little doubt that the adult's knowledge of his first language as well as his greater experience strongly influence the strategies he uses to learn another language (Ausubel, 1964; Selinker, 1972). In our search for a theory, we may find that it is not the loss of language learning ability which explains poor performance, but rather the inappropriate learning situations to which we expose our students. Until this issue is resolved, it will be difficult to place studies like ours in a concrete perspective. It does appear that the outlook for adult language learners is much more positive than is generally supposed.

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